

PUBLIC HEALTH ACT

(11 & 12 Vict. Cap. 63.)

REPORT

TO THE

GENERAL BOARD OF HEALTH

ON A

PRELIMINARY INQUIRY

INTO THE SEWERAGE, DRAINAGE, AND SUPPLY OF
WATER, AND THE SANITARY CONDITION
OF THE INHABITANTS

OF THE PARISH AND TOWN OF

EAST STONEHOUSE,

IN THE COUNTY OF DEVON.

By ROBERT RAWLINSON, Esq.,
SUPERINTENDING INSPECTOR.



LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

NOTIFICATION.

THE General Board of Health hereby give notice, in terms of section 9 of the Public Health Act, that on or before the 15th day of January next, being a period of not less than one month from the date of the publication and deposit hereof, written statements may be forwarded to the Board with respect to any matter contained in or omitted from the accompanying Report on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Parish and Town of EAST STONEHOUSE, in the County of Devon, or with respect to any amendment to be proposed therein.

By order of the Board,

C. MACAULAY, *Secretary.*

Whitehall, 28th Nov. 1853.

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PUBLIC HEALTH ACT (11 & 12 Vict. c. 63).

Report to the General Board of Health on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Parish and Town of EAST STONEHOUSE, in the County of Devon. By ROBERT RAWLINSON, Esq., Superintending Inspector.

London, September 1853.

MY LORDS AND GENTLEMEN,

ON the 6th day of January 1853 the following memorial was forwarded from East Stonehouse "imploping your Honourable Board to exercise the powers vested in you, &c."

MEMORIAL.

"To the Honourable the Commissioners of the General Board of Health.

"The Memorial of certain of the inhabitants of the parish of East Stonehouse in the county of Devon,

"SHEWETH,

"THAT your memorialists are owners and occupiers of property in the above-named parish, and in the immediate locality of Water Lane; at the bottom of this lane are situated quays, on which deposits of town soil, and filth of almost every description, not only from this town, but from the neighbouring towns of Plymouth and Devonport, are constantly being laid, and constitute a nuisance of the very worst description:

"That your memorialists have ascertained from competent judges that there is now on the premises alluded to not less than from 800 to 1,000 tons of night-soil, from which an abominable stench arises, carrying malignant disease and death among the hundreds of poor inhabitants residing in the neighbourhood, as is evidenced from the great mortality at all seasons, and more especially in hot weather, or during the prevalence of an epidemic:

"That your memorialists know that the parish authorities and the (provisional) Local Board of Health have had their attention called to this nuisance several times; but without producing any permanent beneficial effect. Your memorialists, therefore, implore your Honourable Board to exercise the powers vested in you, and

to take such steps as will at once and for ever remove from this poor neighbourhood such a fruitful cause of disease and death.

“Dated East Stonehouse, 6th day of January 1853.

(Signed) “ Wm. H. Bayly, merchant, Harson Villa, High Street.

Wm. Lambell, timber dealer, Water Lane.

George Pike, property in High Street.

Wm. Atwell, occupier, Fore Street.

Joseph Carter, owner of tenements, Water Lane.

Richard Rowlands, “ pensioner,” Water Lane.

Richard Berry, baker, High Street.

Herbert Quarm, painter, Market Street.

Joseph Gliddon, resident. High Street.

John Kidger, resident, High Street

John H. Martin, owner and occupier.

George Geake, timber dealer, Market Street.”

REMARKS.—Prior to the reception of this memorial the attention of your Honourable Board had been directed to the great mortality usually prevailing in the district ; and in my recent Report on Plymouth many passages describing local nuisances have as much reference to Stonehouse as to Plymouth. The three towns of Plymouth, East Stonehouse, and Devonport, form but one town ; constituting one of the largest naval stations in the Kingdom, and, as a commercial seaport, growing in importance yearly, Government is more directly concerned in the sanitary improvement of the towns, than if such naval and military establishments did not exist. Typhus fever is ever present amongst the poor. When cholera appears in the country, this district suffers most severely ; and the returns made by the Registrar General show a mortality much above the average of the country.

INQUIRY.

This inquiry was made under the powers of the 8th section of the Public Health Act, the annual rate of mortality for seven years having been at the rate of 29 per 1,000, or 6 deaths per 1,000 above the rate at which Parliament has provided your Honourable Board may cause inquiry, &c.

Having received instructions to proceed to East Stonehouse, I caused copies of the following notice to be duly posted and advertised in accordance with the terms of the 9th section of the Act :—

“ PUBLIC HEALTH ACT, 1848—11 & 12 Viet. c. 63.

“ *Notice.*—Whereas, in pursuance of the Public Health Act, 1848, the General Board of Health have directed Robert Rawlinson, Esquire, one of the Superintending Inspectors appointed for the purposes of the said Act, to visit the Parish of East Stonehouse

in the County of Devon, and there to make public inquiry and examine witnesses with respect to the matters following ; that is to say,

The sewerage, drainage, and supply of water ;

The state of the burial-grounds ;

The number and sanitary condition of the inhabitants ;

The Local Acts of Parliament (if any) for paving, lighting, cleansing, watching, regulating, supplying with water, or improving, or having relation to the purposes of the said Act ;

The natural drainage areas ;

The existing parochial or other local boundaries ;

The boundaries which may be most advantageously adopted for the purposes of the said Act ;

And other matters in respect whereof the General Board of Health is desirous of being informed for the purpose of enabling them to judge of the propriety of reporting to Her Majesty or making a provisional order, with a view to the application of the said Act or any part thereof to the said parish :

“ Now, therefore, I the said Robert Rawlinson do hereby give notice, that on the twenty-seventh instant, at ten o'clock in the forenoon, at St. George's Hall, I will proceed upon the said inquiry, and that I shall then and there be prepared to hear all persons desirous of being heard before me upon the subject of the said inquiry.

“ Dated this sixth day of July 1853.

“ ROBERT RAWLINSON.”

On the day and at the time specified in the above notice I attended at St. George's Hall, and commenced the inquiry.

Names of the Parties who attended.—The following gentlemen were present at the inquiry ; viz., Admirals Thomas and Maurice, Lieut. Tancock, Rev. G. Knowling, J. Sheppard, Esq., M.D., and J.P. ; D. Boger, Esq., Solicitor ; and C. Bewes, Esq., Solicitor, Stewards of the manor of Stonehouse ; R. Rodd, Esq., Solicitor, Superintendent Registrar, and Clerk to the Magistrates ; H. Perry, Esq., Surgeon, and Chairman of the Commissioners of Waterworks ; Messrs. H. Harris, W. Payne, T. Mayne, H. B. Snell, J. C. Hancock, J. Bishop, G. Pike, A. Schuyler, J. P. Mann, Clerk to the Commissioners of Waterworks, W. Bray, W. Brown, E. W. Cole, W. Roberts, G. Slater, W. Wey, W. Randle, J. Chown, J. Eads, J. Harvey, W. H. Chimmo, C. Chapple, J. Carter, George Williams, B. C. Cross, and others.

Publication of the Notice of Inquiry.—Admiral Maurice and Mr. T. Mayne proved that copies of the notice had been duly affixed on the places where public notices were usually

affixed; and the following letter forwarded to the Board by the gentleman to whom the notices had been entrusted was read:—

“ Stonehouse near Plymouth,

“ Sir,

12th July 1853.

“ I HAVE to acknowledge your letter of the 7th instant, and in accordance with the request of the General Board of Health, beg to acquaint you that the copies therein inclosed of the visit of the Superintending Inspector to the parish of East Stonehouse were affixed on the 9th instant on the doors of the principal churches, chapels, public buildings, and places.

“ Some months ago, when I addressed the Board by desire of several persons respecting the accumulation of soil by certain parties (which has been since abated), the Board replied that in this isolated case they did not possess the power to cause the removal. However, I did not contemplate that a proposition would have been suggested for applying the Public Health Act to this town, which, with the general feeling of the inhabitants in unison with my own, I consider quite unnecessary, entailing a heavy expense without an adequate benefit.

“ On referring to the local acts for the government of this township, I find ample powers are vested in the parochial officers to remedy all nuisances by exercising a persevering zeal with ability.

“ I am, &c.

(Signed) “ WM. H. BAYLY.”

“ C. Macaulay, Esq., Secretary,

“ Board of Health, London.”

REMARKS.—Mr. Bayly, having, it appears, been frightened by the seolding of parties wishful to remain quiet, strove to prevent an inquiry for the purpose of applying the Public Health Act, having been persuaded that the attendant expenses would be most oppressive; and that all local authority would be superseded. Many other parties entertained similar ideas. I explained that the Act was devised to create a local governing body, and to grant all the powers of a Private Improvement Act, at the least cost. An imperfect Private Act would cost the ratepayers from one to two thousand pounds; the application of the Public Health Act, I explained, would not cost more than 100*l*.

TOPOGRAPHY.—East Stonehouse is a township and parish in the hundred and petty sessional division of Roborough in the county of Devon. It is situated between the towns of Plymouth and Devonport. It is separated from the former by Mill Bay, and a boundary line running behind the gasworks, across the middle of Union Street, and up Twickenham Place, Manor Street, and Eldad Road to Millpool, a little east of Mill Bridge, opposite Stoke, and from

the latter town by Stonehouse Pool and Stonehouse Creek and Lake. By the Reform Act of 1832 it was added, for parliamentary purposes, to the borough of Devonport. For all other purposes of local government it is entirely distinct from Plymouth and Devonport.

HISTORY.—East Stonehouse was formerly known by the name of *Hepeston* or *Hippeston*, and in the reign of Henry the Third contained but one house, the seat of the then lord of the manor, Joel de Stonehouse, and from this family the parish derived its present name. It was then called *Eust* Stonehouse, to distinguish it from the hamlet of *West* Stonehouse, situated on the opposite side of the Pool, now called by the name of Cremyll. The land within the parish passed by marriage into the Durnford family, and afterwards to the Edgcumbe family. The Earl of Mount Edgcumbe is now lord of the manor and owner of the entire parish, with some few exceptions. The present town is of modern growth, although according to Risdon it would appear to have been a place of some importance in the beginning of the 17th century. In 1801 the population was but 3,407, and it is only since that period that any rapid increase has taken place. During the late war it rose into importance from its convenient situation for naval and military depôts. There are now several Government establishments; viz., the Royal Naval Hospital, the Royal William Victualling Yard, and the Royal Marine Barracks.

Churches and Chapels.—The following are the churches and chapels in the parish:—

Churches.—St. George's, St. Paul's, and the Hospital Chapel.

Chapels.—Corpus Christi, Calvinist; Ebenezer, Baptist; Edgcumbe Street, Wesleyan; Emma Place, Independent; Siloam, Bible Christian; and St. Mary's, Roman Catholic.

LOCAL GOVERNMENT.—There is no local government having sufficient power to grapple with the nuisances which exist, and yet much money has been expended on Private Acts. The several local bodies are all elected by the rate-payers: There are, The guardians of the poor,—The church-wardens and overseers,—The board of surveyors; elected under the General Highway Act,—The Commissioners of waterworks; elected under the Waterworks Act, and The inspectors of lighting and watching elected under the General Lighting Act.

LIST of ACTS of PARLIAMENT having reference to EAST
STONEHOUSE and the District.

No. 1.—Act for building Stonehouse bridge, 7 Geo. 3., 1767.

No. 2.—Act for erecting Stonehouse Mill bridge, 11 Geo. 4., 1830.

No. 3.—Act for bringing fresh water to the town of Stonehouse, 35 Eliz. e. 12.

No. 4.—Act for supplying Plymouth Doek (now Devonport) and Stonehouse with water, 33 Geo. 3. e. 85., 1793.

No. 5.—Act for making and lighting the turnpike roads between Plymouth and Plymouth Doek (now Devonport), and for regulating the fares of hackney coaches, &c., 45 Geo. 3. e. 34., 1805. (*Expired.*)

Act to enlarge the term and powers of the Act of 45 Geo. 3. e. 34. relating to the turnpike roads between Plymouth and Plymouth Doek (now Devonport), 3 Geo. 4. e. 51., 1822. (*Expired.*)

No. 6.—Act for regulating hackney coaches and boats, 6 & 7 Viet. e. 61., 1843.

No. 7.—Act for completing the victualling establishment at Cremill Point, Stonehouse, 5 Geo. 4. e. 49., 1824.

No. 8.—Act for rebuilding the chapel of East Stonehouse (St. George's Chapel), 27 Geo. 3. e. 17., 1787.

No. 9.—Act relating to the lighting and watching of parishes in England and Wales, 3 & 4 Will. 4. e. 90., 1833. (*General Act adopted for lighting and watching.*)

No. 10.—Act for better supplying with gas the borough of Devonport, 8 & 9 Viet. e. 64., 1845. (*Does not affect Stonchouse.*)

No. 11.—Act for better supplying the borough of Plymouth and parish of East Stonehouse and neighbourhood with gas, 8 Viet. e. 65, 1845.

No. 12.—Act for establishing a general cemetery in the neighbourhood of Plymouth, Devonport, and Stonehouse, 9 Viet. e. 27., 1846.

No. 13.—Act for constructing "The Plymouth Great Western Docks," 9 & 10 Viet. e. 383., 1846.

No. 14.—Act for the better supply of East Stonehouse with water, 14 & 15 Viet. e. 111., 1851. (*Title.—An Act for supplying with water the parish or township of East Stonehouse in the county of Devon, and for amendment of Act. 24 July 1851.*)

Incorporated with the above Act are—

LANDS CLAUSES CONSOLIDATION ACT, 1845.

WATERWORKS CLAUSES ACT, 1847.

COMMISSIONERS CLAUSES ACT, 1847.

REMARKS.—The Act No. 14. alone requires especial notice, as affecting the application of the Public Health Act. The cost of obtaining Act No. 14. was about 1,400*l.*

POPULATION AND HOUSES.—The following table shows the population and number of houses in 1851:—

STONEHOUSE.

HOUSES.				PERSONS.		
Year.	Inhabited.	Uninhabited.	Building.	Males.	Females.	Total.
1851 - -	1,178	49	6	5,154	6,817	11,971
1841 - -	1,066	42	8	4,149	5,563	9,712
Increase -	112	7	—	1,005	1,254	2,259

TABLE showing the Progress of the Population in 50 years.

STONEHOUSE.			
Year.	Persons.	Increase.	
		Number.	Per Cent.
1801	3,407	—	—
1811	5,174	1,767	51·68
1821	6,043	869	16·79
1831	9,571	3,528	58·38
1841	9,712	141	1·47
1851	11,971	2,259	23·25

TABLE showing the Progress of Buildings in 50 years.

STONEHOUSE.			
Year.	Houses.	Increase.	
		Number.	Per Cent.
1801	358	—	—
1811	532	174	48·60
1821	717	185	34·77
1831	976	259	36·12
1841	1,066	90	9·22
1851	1,178	112	10·50

REMARKS.—These tables show that the increase in population has been exceedingly rapid since 1801,—greater than in either of the towns of Plymouth or Devonport during the same period. The increase in the number of houses has not been quite in the same ratio as the increase in the population. In 1801 there were 358 houses, or one house to every 9·5 of the population. In 1851 there were 1,178 houses, or one house to every 10·16 of the population. This is nearly double the average of all England, which is about 5½ persons to each house. This local overcrowding is one cause of so much preventible disease.

A great portion of the land constituting the parish is now built upon. The following particulars as to the rental of land for building and for other purposes was furnished at the inquiry :—

“ PARTICULARS as to the RENTAL OF LAND in East Stonehouse. for Building and for other Purposes. By C. Bewes, Esq., Solicitor, and Steward of the Manor of East Stonehouse.

“ The manor of East Stonehouse is the property of the Earl of Mount Edgeumbe, and all the lands within the manor (with the following exceptions) are also his property.

“ The exceptions are the lands upon which are built,—

1st. The Royal Naval Hospital (founded in 1762):

2d. The Royal William Victualling Yard (established in 1824):

3d. The site of St. George's Chapel (rebuilt in 1789) and the burial grounds adjoining :

4th. St. Paul's Chapel (built in 1831):

5th. The Government ground, usually known as the Long-room Hill: and

6th. Certain land sold to the Great Western Dock Company for the purposes of their works.

“ The remaining Government property, viz., the Royal Marine Barracks, and the Fort on the Battery Hill, is of leasehold tenure, with a right of perpetual renewal.

“ The tenure of all the property situate within the manor of East Stonehouse (with the previous exceptions) is that of a leasehold for a term of 99 years, determinable upon the death of the survivor of three lives, with a right of perpetual renewal.

“ A conventional rent, calculated according to the exact quantity of ground granted, and varying in amount from 1s. 6d. to 2s. 6d. (and in some cases 4s.) per square perch, is reserved by each lease to the Earl of Mount Edgeumbe; and upon the death of a life, a heriot, double the amount of the annual rent, becomes payable, as well as a fine (calculated at the rate of 20s. for each shilling of rent reserved), as the consideration to be paid for the renewal of the lease by the nomination of a new life in the place of the life that has dropped.

REMARKS.—I received much assistance from Mr. Bewes at the inquiry; and I was informed that the Earl of Mount Edgeumbe is most anxious that efficient sanitary works should be carried out in Stonehouse; with proper sewerage and drainage, a full supply of pure water, and regular cleansing, the town of East Stonehouse may be made one of the most healthy places in England. Many valuable lives may be prolonged; much sickness, misery, pauperism, and crime, may be prevented; and the money value of the property in the district be increased.

MORTALITY.—The following are the Registrar General's returns of the mortality in East Stonehouse, during the seven years ending 1851 :—

PARISH of EAST STONEHOUSE.

A RETURN of the Total Number of Deaths in each of the seven years ending 1851, with the Proportion of Deaths to 1,000 living during that period ; also the Number of Deaths in each of the same years from the Zymotic class of Diseases, in the parish of East Stonehouse in the county of Devon.

Population in 1841 - - 9,712
Population in 1851 - - 11,979

	1845.	1846.	1847.	1848.	1849.	1850.	1851.	Total.	Annual proportion per 1,000 living.
All Deaths - -	254	281	250	382	473	317	325	2232	29
Deaths from Zymotic Diseases - -	41	50	49	138	225	86	79	668	

(Signed) GEORGE GRAHAM,
General Register Office, Registrar General.
15th January 1853.

REMARKS.—These returns show that the annual mortality, on an average of seven years, is at the rate of 29 per 1,000 of the population. An objection was taken to the returns on the ground that they included deaths which occurred in the Naval Hospital. This objection, however, could not be entertained, inasmuch as there is no power in the 8th section, to omit, under any circumstances, any one death from a return. But as some of the inhabitants at the inquiry seemed to feel that an injustice was done to the town by including the deaths occurring in the Naval Hospital, it may be satisfactory, approximately, to ascertain to what extent those deaths influenced the general average mortality. It was stated at the inquiry that the number of deaths in the hospital in 1851 amounted to 37; and taking this to be the annual number during each of the seven years ending 1851, and deducting the same from the total number of deaths, the average annual mortality is at the rate of 25·85 per 1,000 of the population, or nearly 3 per 1,000 in excess of the number specified in the 8th section of the Public Health Act. Even this is a very high rate of mortality. The returns of the Registrar General show that East Stonehouse is as unhealthy as either Plymouth or Devonport. The remarks made in my Report on the former place with reference to the local mortality, will therefore apply to East Stonehouse. The

test, however, which is most safely to be relied upon, is the proportion of deaths from the zymotic class of diseases to the total deaths. Wherever deaths are in excess, this class of disease is found to prevail; and, inasmuch as it has been proved that zymotic diseases are fostered and nourished by the presence of filth and overcrowding, the sanitary condition of a town must be defective where such diseases prevail. The total number of deaths in the seven years ending 1851 was 2,282. The deaths from zymotics were 668, being at the rate of 29·3 per cent., or about 7 per cent. in excess of the deaths from the same class in the metropolis. In the Registrar General's Report on Cholera, East Stonehouse is placed in the list of places where cholera was most fatal; and in that list there are only eight places in England where the proportion of deaths from cholera to the population was greater than at Stonehouse,—Plymouth ranking the seventh, Sculcoates the eighth, and East Stonehouse the ninth. In Stonehouse 148 persons died from cholera to every 10,000 living.

The sanitary condition of the town has been deteriorating as it has increased in population. In 1845 and 1846 the deaths from zymotics were respectively 41 and 50. In 1850 and 1851 they were respectively 86 and 79. In 1843 and 1849,—fever and cholera years,—138 and 225. It is to this class of diseases that the earnest attention of the inhabitants should be directed, inasmuch as by removing the causes, they will, to a great extent, banish the diseases from their town, and will thereby, as previously stated, save a large amount of human life, as also a vast amount of sickness, and consequently, of misery, pauperism, and crime. The deaths, in excess, occur chiefly amongst the poorer classes, for they are compelled to dwell in those places where poisonous gases are generated. Even when in health, it is often a hard struggle with them to support life; but when typhus kills the head of a family, their support being taken away, mother and children are pauperised. Many an Englishman will struggle hard, and bear almost every privation, before seeking parochial assistance, but once reduced by disease to pauperism, they seldom regain independence of character. Cases in proof of this are to be met with in every town of the kingdom.

As it may be a means of directing attention to the importance of sanitary improvements I have attempted to show what has been lost during the seven years ending 1851, by "*preventible sickness*" and "*preventible deaths*." It has been proved that the average cost of each case of preventible death is, in funeral expenses, about 5*l.*; that for

every such death there are thirty cases of sickness, and that the cost of each case is 1*l*. In Stonehouse there were, in the seven years before mentioned, 668 cases of preventible death; the money loss to the inhabitants has been therefore as follows:—

668 fatal cases, at 5 <i>l</i> . each, for funerals only	..	£ 3,340
20,040 cases of preventible sickness, at 1 <i>l</i> . each		20,040
Total loss		<u>£ 23,380</u>

It has also been calculated that each fatal case of sickness is attended with a loss of five years upon each adult life, and the value of each, supposing all to be of the poorest class, has been estimated at 10*l*. per annum. The total money loss has been therefore as follows:—

Loss by preventible sickness	-	-	£ 23,380
Loss of five years upon each adult life (one fourth, 167), at 10 <i>l</i> . per annum each	-	-	8,350
Total		-	<u>£ 31,730</u>

or a total annual loss to the parish of 4,533*l*. However much this mode of reasoning may be disputed, it is no less a fact that some such loss has occurred, and that the inhabitants have had to bear it.

In slave-owning countries, where human beings are purchaseable, and are purchased, the market value of an adult varies from fifty pounds to one thousand pounds. It is, in this case, clearly the interest of the owner to preserve such lives, so as to avail himself of the labour he requires. There is no individual ownership of life and of labour in a free country, but as it is life and labour which give strength to States, and value to property, it is clearly the interest of a State to preserve life in health and strength to the longest period.

BURIAL GROUNDS.—The principal place for burial within the township is attached to St. George's Chapel. This ground is of limited area, and has been used as a place for interment during the space of several hundred years. The footwalks are lower than the general surface; the ground on the higher side of the chapel having been raised some feet, vertical, by the accumulation of human bodies and coffins, and the whole area is covered by tomb-stones, grave-stones, head-stones, and mounds of earth. It was stated that coffins are laid in the ground within two

feet of the surface. A small triangular shaped portion of new ground has recently been added, but it is very inadequate to the requirements of the district. This graveyard is bounded on the north by Newport Street, on the east by Chapel Street, and on the north-west and south-west by Stonehouse Creek; the slope of the ground is towards Chapel Street and Newport Street, so that any subsoil drainage or percolation is towards the houses in these streets.

There are private vaults and graves which may probably be used under certain restrictions without danger to health; but the place, as a public burial ground, ought for ever to be closed.

There is a small space used for burials attached to the chapel of the Independents, in Emma Place. This ground is said to be full.

Burials have taken place within the Roman Catholic Chapel, but an order has been given to prevent any in future.

REMARKS.—As there is a public cemetery within a reasonable distance, the overcrowded graveyards in Stonehouse and in Plymouth ought to be for ever closed.

WATER SUPPLY.—An Act was passed in the 35th year of the reign of Queen Elizabeth (see Appendix A.) for supplying the town with water. The town is also partly supplied by the Devonport Water Company, who derive a revenue of about 1,200*l.* annually from the inhabitants. The supply is intermittent, the water being laid on for two hours every other day; their annual rentcharge per house, without reference to the size, is 1*l.* sterling. The water from the Devonport leet is soft in quality.

The following particulars, as to the New Waterworks now in progress, are taken from a local report.

“EAST STONEHOUSE WATERCOURSE.

(Extracts from Report by Mr. Chapple.)

“The town of Stonehouse was supplied with the present stream of fresh water, by an Act of Parliament passed in the year 1593, and in the 35th year of the reign of Queen Elizabeth, for the use of the inhabitants for ever.

“The head spring rises in Tor Court, about three miles from the town.

“In the year 1829, when I first surveyed and made a map of the same, there were then three springs at that place; since which the owner of Tor has brought the whole into one well, from which he takes supplies for his own uses, until the water

therein rises to a certain aperture in the side thereof, and then the surplus runs into our (the Stonehouse) channel, and the stream is augmented by other springs and streams in its course towards the town, and these will now be collected into the new reservoirs. This stream had not been paid attention to for many years, until about the year 1829, when the Royal Naval Hospital authorities were suffered to have the chief control over the same, as it runs through the said hospital. This water was for a great number of years their only supply, and has for many years been used by them for washing down their sewers, &c., a small quantity being sent home to the shoot in Stonehouse, near the market in Edgcumbe Street, for the inhabitants of the town. Seldom, if ever, one quarter part of the stream reached the said shoot.

“In 1851 the inhabitants of East Stonehouse were prevailed on to frame a new Bill for improving their powers, and for making the stream generally useful, by building reservoirs and conducting the water therefrom in pipes, through the several streets, and thereby bringing water to every man's door. I have at different times of the year, and several periods, measured and proved the water forming this stream, and I have never found less than 1,200 tons of water running there in 24 hours; and this has been also proved, first by Mr. Towson, then by Mr. Laxton and Mr. Easton, of London; this was before the main and tributary streams were taken so much care of as they will be in future. A new Act was obtained, as above stated, by which Commissioners are appointed to carry the same into effect. A purchase of three and a half acres of land has been completed, on which two reservoirs are now in progress of being made, which have been calculated will contain upwards of six million gallons of water; one of which will receive the water through a 12-inch iron pipe from the leat, and the other through a pipe of the same calibre, at the bottom, through the centre embankment; from which, or from either, if need be, through a 10-inch pipe, with sluices. This pipe has been brought to a place called Pennycomequick, and from thence pipes will be continued of 9-inch calibre, up the ascent to Five Field Lane, and on to Clarence Place in the town; then through the several streets, as per map, by 7-inch, 5-inch, 4-inch, 3-inch, and 2-inch iron pipes, with stopcocks, and about 43 firecocks.

“The end of the main pipe in the reservoirs is about 113·56 feet above the lowest parts of the town, and 54·05 feet above the highest street; and the supply to every house will be continual, through half-inch pipe and cocks, for which the inhabitants will be charged from 6s. to 20s. per annum, according to the annual value of their premises. The cost of the whole undertaking will be about 10,000*l.* which will be paid off in less than thirty years. But this outlay will be no burden to the inhabitants generally, as the houses which now pay 20s. per annum to the Devonport Water Company, for an intermitting supply, will not pay more than the sum above mentioned, viz., from 6s. to 20s. for a continual supply; and as the debt lessens these rents will be

still lower : so that instead of being taxed by this undertaking, the inhabitants will be relieved from a great part of the burden they are now under ; and the new works will, in after years, bring a revenue to the town for water, which, during the last 260 years, has been suffered to run waste into the sea. I expect that this water scheme will be in full operation by the latter end of this present year (1853), at the latest, when it may be all made use of by the inhabitants in various ways, for their cleanliness, health, and comfort.

(Signed) "CHARLES CHAPPLE,

" East Stonehouse,

" 28 July 1853.

" Engineer for the above works.

" *Further.*—Taking the quantity of water to be what has been proved that our resources will afford at moderate times, namely, 1,200 tuns in 24 hours, and the inhabitants to be 12,000, agreeably to the last census, each person could have 22 gallons per diem, if required ; but I find from records, that some parts of London have about 15 gallons, and in Scotland 12 gallons each ; and if those quantities prove to be sufficient, then we could supply nearly 18,000 persons with 15 gallons each ; and at 12 gallons each 22,400 persons, which is a greater number than our town can ever amount to, judging from the space of ground now remaining to be built on ; and the present houses being on the average inhabited by about 12 persons each, it is not at all probable that the population can ever arrive to 50 per cent. above the present number.—C. C."

ANALYSES OF LOCAL WATERS.—Four specimens of water were sent to Dr. Playfair for analysis : one from the source of the Leat ; a second from its source midway ; a third from the conduit in Edgcumbe-street ; and a fourth after a considerable fall of rain.

DR. PLAYFAIR'S REPORT.

" *London, Museum of Practical Geology,*
13th October 1850.

" SIR,

" I HAVE now the honour to report the results of analysis of several waters sent from Stonehouse.

" No. 1. labelled '*Taken from the original Source of the Stream.*'

" This water had a straw yellow colour, and contained a brownish yellow sediment, floeculent in its character.

The hardness of the water is	-	-	-	6·9
Hardness when diluted	-	-	-	7·2

Latent hardness	-	-	-	0·3
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" The fact of the hardness increasing by dilutions shows that it contains magnesia as a constituent.

"No. 2. 'Taken from the Stream midway in its Course.'

"This water was colourless, but contained a yellowish white flocculent deposit; no taste or smell.

The hardness of this water is, before dilution 6.5

Hardness diluted with twice its quantity of water - - - 6.6

Hardness diluted with four times its bulk of water - - - 6.8

Latent hardness - - 0.3

"The quantitative analysis of this water was as follows :

Carbonate of lime - - - 58.4

Carbonate of magnesia - - - 1.76

Chloride of sodium - - - 1.96

Sulphate of soda - - - 1.50

Carbonate of iron - - - -

Silica - - - - 0.56

Organic matter - - - 1.75

13.37 grains per gall.

The hardness of this water by analysis is - 7.9

The alkalinity of the water by do. - - 7.0

"There is, therefore, a slight excess in the analysis, probably due to the small quantity sent.

"The hardness and alkalinity of the water may be safely stated at 7.0.

"The water, in boiling for $2\frac{1}{2}$ hours, softens $1\frac{1}{2}^{\circ}$, becoming $5\frac{1}{2}^{\circ}$.

"No. 3. 'Water taken from the Town Conduit.'

"The physical properties of this water were similar to the last.

Hardness before dilution - - - 7.2

Diluted twice its bulk with water - - 7.4

"No. 4. 'Water taken from the Leat, after a heavy fall of Rain.'

"This water behaved very singularly, and seemed to denote the presence of much more magnesia than in the other specimens; but as my instructions were only to analyse quantitatively No. 2. I have not examined further into this.

Hardness of water without dilution - - 8 $\frac{1}{4}$

Diluted with water twice its bulk of water - 10

"The preceding examination requires a little explanation: you are aware each degree of hardness means that which would be given to a gallon of pure water by one grain of carbonate of lime; 7° therefore implies the presence of earthy salts equivalent to 7 grains of chalk per gallon.

"This hardness (7) is about half that of the Thames, as supplied to London. It therefore represents a water of moderate hardness. The hardness is of that peculiar variety which actually increases by dilution with pure water, by the development of the hardness

due to the magnesia, which was to a certain extent *latent*. One water, No. 4., the amount of latent hardness is striking; in the other cases, so small as to be unimportant.

"The quantitative analysis does not exhibit any objectionable features in the water. The amount of organic matter, though not excessive, is above the average. It would, however, appear to be of that kind which becomes insoluble by exposure to air; for the water collected midway in the stream contains less than at its source.

"The water is softer than that supplied to many large towns, and perhaps represents the average hardness of the towns of this country. As the consumption of soap is almost directly in proportion to the hardness of the water, you will effect a great saving if you contrast the water with that supplied to London; but, nevertheless, a considerable amount will still be required to neutralize the 7° which you possess. But the terms hard and soft are relative to the sources of supply in a district, and the sources which you have chosen may be the softest available for the purposes of public supply.

"I have the honour to remain,

"Your faithful servant,

"Henry Perry, Esq."

"LYON PLAYFAIR."

Remarks.—The New Waterworks are expected to be completed this year (1853), at a cost of about ten thousand pounds. The volume at command is not in excess, and the water is harder than is desirable. The works, at the source, consist of two open reservoirs, out of which the water will be drawn to the town, through a cast-iron main. At the time of my inspection, no arrangement had been made for filtering the water, so that conservæ and animalculæ, which will inevitably be generated, must pass into the pipes, and be delivered with the water at the house service. Wire or gauze screens, however fine, do not prevent this; even sand-filters leave all chemical and some mechanical impurities in water. That is the most perfect form of waterworks, in which the springs are taken at their rise, the water conveyed in closed drains to covered reservoirs, and from thence, by mains and service-pipes, to within each house; so that pure, cool, and uncontaminated spring-water is delivered to each inhabitant. Filtering is not, in such a case, required; and no form of filter will give the pure, fresh, and healthy briskness of good spring-water. There has been much local opposition to the new Works in Stonehouse; but though not perfect, they will be of great benefit to the town. If a full supply could have been obtained, on reasonable terms, from the Plymouth or Devonport Works, the outlay on the Stonehouse Works might have been saved.

SEWERAGE AND DRAINAGE.—The sewerage of Stonehouse is very limited, it has not been carried out upon any system. The drains which have been constructed for other purposes than to take off the surface water are merely receptacles for the accumulation of offensive matters, and are therefore more a nuisance than a benefit. Many of the most populous streets are without any drains. Fore Street and George Street, both containing a numerous population, are in this condition, and Union Street, on the northern side of which nine tenths of the deaths from cholera occurred in 1849, is without a sewer or drain. It was stated by Mr. John Quatreman that eighteen houses in the street in which he resided were unprovided with drains. Evidence was given at the inquiry to the same effect, with reference to other parts of the town.

Remarks.—Sewers and drains of transmission are absolutely necessary to the health of town populations. Men, in crowds cannot live amidst accumulations of their own refuse, without suffering; and the cheapest way to remove such refuse, at once, is by means of proper street sewers, and house drains fully ventilated; and by the use of soil-pans or water-closets, in place of the common privy and foul open cesspool.

LIGHTING.—The parish is lighted by gas, supplied by the Plymouth and Stonehouse Gaslight and Coke Company. The works are situated at the east end of Stonehouse. Numerous complaints have been made at various times of the stench and nuisance which the manufacture of gas causes. In the Appendix D. to my Report on Plymouth are two memorials, signed by a considerable number of the inhabitants, complaining of the nuisance thereby caused. It was stated at this inquiry that the works would be removed from their present site in the course of eighteen months or two years.

A contract was entered into about seven years since to supply the town of Stonehouse with gas at the rate of 2*l.* 16*s.* 9*d.* per lamp. At that time there were two rival companies, and the amount charged then is said to have been less than the cost price of the gas. Upon the expiration of the contract, on the 31st of July last, the directors of the company raised the charge to 3*l.* 17*s.* per lamp. The charge to private consumers is 5*s.* per 1,000 cubic feet.

Remarks.—Cheap gas is found to be alike profitable to the makers as beneficial to the consumers. Gas-lights, in public streets, are a convenience and a protection. Cheap

gas may be used advantageously in private houses for many purposes; there should, however, be good ventilation.

BEER-HOUSES, &c.—In my Report on Plymouth evidence is given as to the effect of the beer-houses on the moral character of the population; and that evidence is applicable to this parish. The number of beer-shops in Stonehouse is greater in proportion to the population than either in Plymouth or in Devonport, and the evil is, therefore, proportionately greater. In Plymouth there is one beer-shop to every 264 of the population; in Devonport one to every 215; and in East Stonehouse one to every 196. The baneful effect which these places have upon the population, by the facilities they afford for the development of the worst passions of human nature, is a matter upon which evidence has been afforded in several towns which I have visited. The magistrates have very little control over beer-houses.

Remarks.—Many boys are prematurely lead astray by the facility with which the means of intoxication are placed within their reach, and drunkenness is ever the parent of vice and of crime.

LETTERS DESCRIBING LOCAL SANITARY DEFECTS.—Mr. Joseph Carter, in the following letter, states some of the evils attendant upon defective sanitary arrangements:—

“ SIR,

“ Stonehouse, 25th July 1853.

“ SEEING an advertisement in the local papers informing the inhabitants of this town and parish that you will be in attendance at St. George’s Hall on Wednesday next to make inquiry and examine witnesses as to the sanitary condition of the town, I beg to acquaint you of the existence of a great nuisance near my premises in Water Lane, materially affecting the public health in that locality, and against which I have made repeated complaints to the guardians of the poor, with a view to its removal; and they have been kind enough to give the author of the nuisance notice to remove same, but he has only partially complied therewith; and unless some stringent measures are adopted to compel the *total* abatement, I fear its continued existence will cause a sad nursery for the cholera (should it ever unfortunately revisit us).

“ This nuisance (of so formidable a nature) is occasioned by swine kept in the neighbourhood, and other causes, and the accumulation of filth and dirt produced thereby is so offensive as (together with the insufficient sewerage of the place) to call loudly for a remedy; and I purpose being in attendance on the day named to substantiate the charge, should my evidence be thought necessary in reference to your proposed *all-important* inquiry.

“ I have &c.,

“ Robert Rawlinson, Esq.”

“ JOSEPH CARTER.”

&c. &c. &c.

Mr. Thomas Simpson, in the following letter describes nuisances which are common to many other parts of the town than the one complained of:—

2, Chapel Lane, Stonehouse,

“ SIR,

27th July 1853.

“ I HAVE been a resident in this parish 42 years, and ratepayer, living in my own premises, and surrounded with nuisances ; six privies or necessaries, on the north side of my house, close up to the wall, which when the north wind blows is quite offensive ; no sewerage nor common sewers.

“ THO. SIMPSON.”

GENERAL REMARKS.—This inquiry was (as stated) in consequence of the high rate of mortality shown by the return of the Registrar General. Objections appeared to be entertained to the application of the Public Health Act, chiefly on the ground of expense, which it was apprehended the measure would entail on the ratepayers. These objections are, however, founded on a misapprehension of the provisions of that Act, and will, I have no doubt, be removed after a careful consideration of those provisions. The ratepayers having already been put to a large expense for obtaining an Act for supplying the town with water, this circumstance has rendered them fearful that the application of the Public Health Act will be attended with a similar cost. This, however, will not be the case, as the application of that Act will not exceed one tenth of the cost of the former. The advantages which the inhabitants will derive from the Public Health Act are numerous and valuable. They will have a local body, elected by themselves, for carrying on the government of the town ; on that body will be conferred ample powers for sewerage, drainage, the regulation of slaughter-houses and common lodging-houses, for street cleansing, for the removal of nuisances ; and, for remedying all those evils which have now so unfavourable an influence on the population, and more especially on the poorer classes. The high rate of mortality, and the defective sanitary condition of the town, I consider, renders the application of the Public Health Act necessary.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS.

CONCLUSIONS.—1. That the sanitary condition of the parish of East Stonehouse is exceedingly defective.

2. That the geographical position of the district is very favourable to health.

3. That the occupations of the inhabitants are such as, under proper sanitary arrangements, would probably secure to them the highest degree of longevity attainable in this country.

4. That the existing expedients for obtaining water for domestic purposes are defective and expensive, but that new works are now in course of completion.

5. That there are no effective sewers nor house drains. That the cesspools, privies, and appurtenances to houses are injurious to the health of the people. That there are no proper arrangements for the removal of decomposing animal and vegetable refuse matters from the midst of the population. Slaughter-houses are unregulated ; and, the existing graveyards are overcrowded, and ought to be closed.

RECOMMENDATIONS.—Whereupon I beg respectfully to recommend—

I. That the Public Health Act (1848), except the section numbered 50 in the copies of that Act as printed by Her Majesty's printers, should be applied to the Parish and Town of East Stonehouse in the county of Devon.

II. That the Local Board of Health, to be elected under the said Public Health Act, shall consist of twelve persons, and that the entire number shall be elected for the whole of the said district.

III. That one third in number of the said Local Board shall go out of office, and a new election take place, on the first Monday after the 25th day of March in each year subsequently to that in which the said first election takes place.

IV. That every person at the time of his election as member of the said Local Board, and so long as he shall continue in office by virtue of such election, shall be resident, as in the said Public Health Act (1848) is required, and be seised and possessed of real or personal estate, or both, to the value or amount of not less than eight hundred pounds, or shall be so resident, and rated to the relief of the poor in the said parish upon an annual value of not less than twenty pounds.

I have the honour to be,

My Lords and Gentlemen,

Your very obedient servant,

ROBERT RAWLINSON,

Superintending Inspector

The General Board of Health,

&c.

&c.

&c.

APPENDIX.

APPENDIX A.

REMARKS.—The subject of water supply to towns has only recently been brought fully before the public of this country. Plymouth, Devonport, and Stonehouse, are exceptional; as the Act of Elizabeth proves. The phrase “a full supply of water” means, however, much more now than it did when this Act was framed. It implies a tap *within* the walls of each house and tenement; the water pure and bright, at all times; and, the service at high-pressure, and constant. Unfiltered water, brought through open courses, or ‘*leets*,’ stored and contaminated in open reservoirs, and doled out at public fountains; or, at intervals, by means of stand-pipes, in lanes, courts, yards and passages, is altogether most objectionable, wasteful, and expensive.

AN ACT for the bringing of Fresh Water to the Towne of Stonehouse in the Countie of Devon.

35 Elizabeth. The XII. Chapter.
1593.

WHEREAS the towne of Stonehouse in the countie of Devon, being an ancient towne, bordering upon the mayne sea, and scituate within the famous haven of Plymouth, having a pleasant and safe harbour for shippes adjoining unto the same, commonly knowen by the name of Hamouse, the same being at this present a principall roade of that haven for safetie of all shipping, where as well your Majesties ships as the ships and vessels of divers your Highnesse subjects trading into forcine partes, and from port to port within this realme, do often, upon necessitie, arrive, harbour, refresh, and victuall themselves, as well with fresh water being a thing most needfull for them, as with divers other things, the said towne having for the most part of the yeere either none or at least way very little, fresh water within a mile of the same or thereabouts, a matter very incomodious, by reason whereof your Maiesties shippes, and the shippes of your Highnesse subjects arriving and harbouring in the foresaid haven, the marriners of the same are many and oftentimes driven by necessitie to goe a mile or more from the said towne and their shippes to fetch fresh water for their necessarie uses, by occasion whereof sundry times they loose divers good windes and opportunities of which they might take benefite if they coulde water themselves neerer unto their ships; farther, also the said towne, being subject to fire, as well by the enemie (having once or twice in former times

of warre beene burned by the Frenchmen) as by negligence and other mishaps at home, there is no streame of water in or neere the said towne for the most part of the yeece, especially in the sommer time when the dangers be greatest, by a mile or thereabouts, as drought is : And whereas there is a little streame or brooke of water in the said countie of Devon, rising within three miles of the said towne, and falling into the ester ende of the salt water or salt streame there, knowen by the name of Stonehouse Milpoole or Stonehouse Lake, and the sayde brooke of fresh water called there by the name of Milbrooke Lake, which sayde little streame or brooke of fresh water may, from the originall or first springs thereof, arising within three miles of the sayde towne, be with some charges brought into the said towne of Stonehouse without any great preiudice or damage to any owner or owners, of any land through which the same shal be conveyed, by reason that the passage of the sayd water through the same will bring greater commoditie unto the said land by watering thereof in the heate and drought of the sommer then the breaking or digging of the soyle can any way preiudice the owners of the same ; by bringing of which water also into the sayde towne of Stonehouse most of the incommodities and dangers before recited shall not onely be prevented and holpen, the navie of your Maiestie, and your sayde subjects supplied of their wants for victuall and fresh water, but therewith also your poore subjects, inhabitants of that towne, greatly relieved in their present want of fresh water : May it therefore please your most excellent Maiestie of your most royall goodnesse and accustomed favour, that it may bee enacted by this present Parliament, that the inhabitants of the said towne of Stonehouse, by the names of the inhabitants of the towne of Stonehouse, by themselves, their servants, labourers, and workemen, at all times after the feast of Saint John Baptist next ensuing, shal and may lawfully dig and mine a ditch or trench containing in breadth betweene three and foure foote over in all places through and over all the landes and grounds lying betweene the foresayde towne of Stonehouse and the head or first spring of the foresaide streame or brooke of fresh water knowen by the name of Milbrooke Lake, and to digge, myne, breake, baneke, and cast up all manner of rockes, stones, gravell, and all other lettes in any places or groundes for the necessarie and convenient carying of the aforesayde water to the sayde towne ; and farther, from time to time to doe reparations, and to make weares, banks, and all other things needefull whereby the sayde water may bee brought, and continue unto the sayde towne of Stonehouse, without lette, deniall, vexation, or trouble of the lord or lords, owner or owners, of the same ground, or of any other person or persons, by suite in the law or otherwise, upon paine of twentie pounds for every time that they or any of them doe attempt the contrary thereof, the one halfe of the sayde forfeiture to be to our Soveraigne Ladie, and the other halfe to the sayde inhabitants of Stonehouse that shall sue for the same, to be recovered by action of debt, bill, plaint, or information, wherein the partie defendant shall not wage his lawe, nor in the said action, actions, or suits any essione, licence, or pro-

tection to be allowed, the said inhabitants of the said towne of Stonehouse first giving and paying or compounding to give and pay to the lord or lordes, owner or owners, of the saide soyle where such things shall be made or done, in recompence and satisfaction of and for the land or ground so to be digged or mined, for the full and absolute purchase of the same to the sayde inhabitants of the towne of Stonehouse, so much money as by the two justices of assises for the saide countie of Devon for the time being shall be adiudged, ordeined, and determined ; and also giving and paying to the tenants, farmers, and oocupiers of such land or ground, for such hurt or losses as they or any of them shal have or susteine by the same, so much as shall be likewise assessed and adiudged by the saide two justices of assise for the time being as beforesayd, the sayde recompenees to be payde in such manner and forme and at such times as by the said justices of assise for the time being shall be limited and appoynted.

Provided alwayes, and be it enacted by authoritie of this present Parliament, that no mill or milles shall be newly erected or builded in, upon, or near the said course of water by this Aet intended to be brought to the said town of Stonehouse to the preiudice or damage of any person or persons, owners of any mill or milles seituat or standing upon, in, or neere the sayde water, or to any mill or milles builded or to bee builded upon or neere the river or course of water lately brought to the sayde town of Plymouth, upon payne that the partie so offending shall forfeit for every such offence one hundred pounds ; and that it shall be lawfull for the shirife of the said countie for the time being to deface and pull downe all and every such mill and milles ; the one halfe of every such forfeiture to bee to the Queenes Maiestie, her heirs and successors, and the other halfe to the partie grievd that will sue for the same by accion of debt, bill, plaint, or information, in which suit no essoine, protection, or wager of lawe shall be allowed.

APPENDIX B.

The following letter was furnished by Mr. H. Perry, surgeon. Mr. Perry is one of the Commissioners for supplying the parish with water ; and, during his medical practice, has become acquainted with the defective state of the district :—

“ SIR,

Stonehouse, Devon, 27th July 1853.

“ In submitting for your consideration my opinion as to the general sanitary condition of this township, I do so without the slightest prejudice of any kind ;—for it has been long understood, locally, what my views have been thereon, by the various boards of guardians, who have been clothed with a certain amount of local authority in respect to the surveillance of matters which might be understood to fall under the ‘Removal of Nuisances

Act.' My opinions have been from time to time canvassed by them.

"Did time permit me I might refer you to my correspondence with boards of guardians, in relation to sanitary provisions which I deemed to be essentially important for the well-being of the inhabitants; yet I may here make mention of a monster evil, which for years has been permitted to exist in this parish, without an effort being used by the authorities to remove it, and which in the year 1848, I specially reported to the board of guardians, and suggested an effectual remedy for this grievance which had been so continually complained of. The evil to which I allude is occasioned by deposits of soil, from day to day, of the most noisome character, in the neighbourhood of Water Lane, Stonehouse; and which has been represented to the General Board of Health as sometimes accumulating to many hundreds of tons.

"It is a common circumstance for night-soil to be brought from the neighbouring towns of Plymouth and Devonport, and be deposited in the above situation. The atmosphere is most vitiated, and fever, in one shape or other, is exceedingly common in the vicinity. It must be remembered that noxious gases are not disposed to remain stationary in the locality where they are generated, it being a general law in nature, that they shall be diffused into an atmosphere remote from their origin; and hence it will be understood, that the wealthier classes, who may be living at a distance even from so pestiferous a neighbourhood, will not escape the consequences occasioned from inhaling an atmosphere deteriorated by poisonous gases: for so surely as the atmospheric current takes a direction towards the spot they inhabit, so sure is it that at each breath they draw, they charge their lungs with poisoned air, and, as a natural sequence, the blood becomes deteriorated.

"The remedy I proposed at the period referred to was, that a contract should be arranged so as to have the entire town soil carted into the country, permitting no deposit whatsoever, rather than trusting as then (and at present) to the caprice of barge-owners to remove it from the dung-yard whenever it suited their convenience. The guardians who were then in office seemed to view my argument favourably, but as they had no means to provide funds out of the poor rate for such a purpose, my communication was referred to the surveyors of highways, when no doubt it shared the fate of many a predecessor, by being placed amongst other parochial records to mildew, and be forgotten. I have presumed as much, for from that time till now I have heard nothing of my communication, and the nuisance has continued unabated to this hour.

"I found a person willing to undertake the removal of the soil in question, *daily*, from the town, for the inconsiderable sum of eighty pounds per year; but so long as 'the interest of the ratepayers' is regarded by a jealous few with such an intense affection, so as to stand in the way of all improvement, (forgetting at the same time it is a penny-wise-and-pound-foolish attempt at saving after all,) so long must matters retrograde in Stonehouse, and health be sacrificed at the shrine of popular parsimony. Respecting

the drainage of Stonehouse, it is admitted by every body that it is as bad as bad can be; and until some compulsory system is adopted, matters, in this respect, will become worse rather than better.

“There are no means for flushing the existing drains; some there are which may be said to be ‘trapped,’ but in numerous cases the ingress is open from the gutter-grating to the common sewer, and when west or south-westerly winds prevail, the stench which emanates from these sources of disease and death is intensely intolerable.

“My experience in the treatment of cholera during the late epidemic was considerable; and I hesitate not in declaring, that in nineteen out of every twenty cases the attack was attributable to the patient having been exposed to the inhaling a noxious atmosphere. There were many persons attacked who had been employed in cleansing drains and gully-holes, almost immediately subsequent to their being so engaged.

“I would not make so *heroic* an assertion as to declare my belief that cholera *originates* from such sources; yet I hesitate not in giving it as my opinion, that where persons are exposed to an atmosphere as described, their nervous system becomes depressed, and, as a consequence, they are less able to resist choleraic influences through a diminished condition of their vital energy. There being indisputable data before us, that the deaths in Stonehouse within the past seven years, from what is scientifically described ‘zymotic diseases,’ have greatly increased, it is forced upon us to consider what means we shall provide to meet the exigency, so that in all human probability our sanitary barometer may assume a higher range.

“This is a question of a *vital* character, and it behoves us to ponder it well; for we know not how soon ourselves or families may be implicated in a widely-spreading epidemic, which may be traced to our individual inertness or negligence in not finding the means of protecting the community amongst whom ‘we live, and move, and have our being,’ from an event so direful. It gave me extreme satisfaction in being present to-day in Saint George’s Hall during the inquiry you were commissioned to institute by the General Board of Health; for in all the ramifications which the argument assumed as adverse to the adopting of the Health of Towns Act for Stonehouse, they succumbed to the very clear exposition you made to the meeting of the advantages attending such adoption; and I very sincerely hope, that there is wisdom yet to be found amongst the sages of this township, sufficient to induce the ratepayers to avail themselves of the advantages of a measure, which was not only enacted for the safety of the present inhabitants, but also for generations unborn.

“I am, &c.

“R. Rawlinson, Esq.”

“HENRY PERRY.”

REMARKS.—Should the Public Health Act be applied to East Stonehouse, the working of it must depend upon the ratepayers ; and it will require much attention and great care to do all that is required, and to prevent wasteful expenditure. At present there are few drains in the town, and such as have been made are small in sectional area, and objectionable in form. The rainfall of the district passes over the surface. In devising new sewers, this must be considered. Perfect sewers and drains will remove all the liquid and soluble refuse, at once, from the vicinity of houses ; and, those sewers and drains, which best accomplish this work, ought to be adopted. A sound and true earthenware pipe, properly laid and jointed, will, if fully supplied with water, pass the drainage and soil refuse of one hundred first-class houses ; and such a sewer may be laid, complete, at about six shillings per lineal yard. To construct a brick sewer, large enough for a man to go up, will cost about thirty shillings per lineal yard. The pipe will do the work required better than the large and costly brick sewer. Perfect sewers and drains, a full and complete water supply, with regular cleansing, will not, necessarily, banish all removable disease. There must be pure air around and within the rooms of the poor ; and, to secure this, there must be means for full and free ventilation ; overcrowding must be avoided. The beginning and the end of all sanitary works and regulations should be to preserve an uncontaminated atmosphere without and within each room, at all times. Overcrowding and defective ventilation, probably produce as much of “*preventible*” disease and death in Plymouth, Devonport, and Stonehouse, as defective sewers, cesspools, refuse near dwellings, and bad water.
